

sides of the crown as well as from the centre. This crest, has, in the preparation of the skin, been dorsoventrally flattened to lie upon the nape and upper back. It is possible, therefore, that in life the crest of *Microgoura*, though shorter and of a more dorsal position, may be erected in a fashion similar to that of *Goura*. Meek, who saw freshly-dead, if not living examples of the former, remarked upon the similarity between the crests of the two genera (Meek, 1913:129).

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On adherent colours of the plumage

by PETER BERTHOLD

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Recently, Abdulali (1966) described in this journal the creamy colour of the Pied Imperial Pigeon, *Ducula bicolor*, which apparently is derived from the growing rump feathers.

This coloration is a further example of what I lately (Berthold 1966) termed "Haftfarben", "adherent colours". In this definition, all coloration not produced by pigments within the feather nor by special feather structures, but by substances adhering to the surface of the feather are summarized. To it belongs the "cosmetic coloration", "Schminkfärbung", by coloured oil of the preen gland, pink in the White Pelican, *Pelecanus onocrotalus*, in the Black-headed Gull, *Larus ridibundus* and some other Laridae (Stegmann 1956); yellow in the Great Pied Hornbill, *Buceros bicornis* (Vevers 1964). Further should be mentioned the purple coloration of the lower parts in the Mallard, *Anas platyrhynchos*, in the Teal, *A. crecca* and the Garganey, *A. querquedula*, which is due to a colour of a leaf-louse, described by J. A. Naumann (1818/1844). The discoloration by soot (industrial discoloration, industrial melanism, Hardy 1937, Harrison 1963) observed in many species, is a further example and there is a special case of partial albino House Sparrows, *Passer domesticus*, as a result of discoloration by chemicals (Woodward 1963). Grinnell (1921)

found a bright yellow coloration of the lower surface in two Plain Titmice, *Parus inornatus*, derived from spores of some species of slime-mould (*Myxomycetes*). The purple coloration of a Garganey was Orseille-red (Conventz 1896), probably originating in the waste water of a dye-house. In the Red-crested Knorhaan, *Lophotis ruficrista*, red-coloured powder, containing porphyrin, stains the neck feathers of the bird (Völker 1964).

The most important adherent colour is iron oxide ("rust") shown in the plumage of more than 120 species (Berthold 1966). For instance, the rusty coloration of the Bearded Vulture, *Gypaëtus barbatus*, is due to amorphous iron oxide (Schüz 1927) and a bit of α -quartz, not within the feather, but only adhering to the surface. This iron oxide which loses colour, as Bruce (1791) stated, is not produced by the Bearded Vulture itself, but it sticks to the feathers from iron oxide stained soils of the biotopes of the bird. Iron oxide is mostly found in the Anatidae. These birds get their rusty colour from iron-oxidized water, and it does not adhere to the feather surface, but penetrates thin hollow spaces of the barbs, barbules, hooklets, etc., with a mean diameter of about 200–300 Å.

Certainly, the number of known adherent colours will increase by further investigations.

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Some eggs from the New Hebrides, south-west Pacific

by SHANE PARKER

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From December 1933 to February 1934, and in August and September 1934, F. Shaw Mayer made a small collection of birds' eggs [now in the British Museum (Natural History)] from Tongoa and Shepherd, two islands in the New Hebrides. This collection is described below; no previous descriptions have been traced of the eggs of *Lichmera incana* and *Erythrura cyanovirens*, and little is known of the breeding of the other forms in this area. All measurements are in millimetres.